

U.S. Application Serial No. 10/023,916  
Filed: December 17, 2001  
Amendment Dated: May 7, 2003  
Reply to Office Action Dated: December 4, 2002

**Amendments to/Listing of the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Original)** Method for fixation of toners on a carrier or printing stock, especially a sheet printing stock, preferably for a digital printer, characterized by the printing stock having the toner being heated with at least one radiation pulse or radiation flash of electromagnetic radiation and heated for melting of the toner, and a toner having a sharp transition from its solid to liquid state when heated being used.

2. **(Original)** Method according to claim 1, characterized by the ratio of the value of elastic modulus  $G'$  at the reference temperature calculated from the initial temperature at the beginning of the glass transition of the toner plus  $50^{\circ}\text{C}$  to the value of the elastic modulus at the initial temperature being less than  $10^{-5}$ , preferably less than  $10^{-7}$ .

3. **(Original)** Method according to claim 2, characterized by the initial temperature at the beginning of the glass transition of the toner being determined as that temperature value at which the tangent intersects the functional trend of the elastic modulus  $G'$  as a function of temperature before and after the glass transition.

4. **(Original)** Method according to claim 3, characterized by the transition of the toner from its solid to liquid state occurring in a temperature range of about  $30^{\circ}\text{K}$  or smaller.

5. **(Original)** Method according to Claim 4, characterized by the mentioned temperature range of about  $30^{\circ}\text{K}$  of the change in state of the toner being situated between the temperature values of about  $70^{\circ}\text{C}$  and about  $130^{\circ}\text{C}$ .

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6. **(Original)** Method according to claim 1, characterized by at least two radiation pulses, offset in time relative to each other, being used for melting of the toner.

7. **(Original)** Method according to claim 6, characterized by the total radiation energy density lying between  $1 \text{ J/cm}^2$  and  $18 \text{ J/cm}^2$ , preferably between  $3 \text{ J/cm}^2$  and  $10 \text{ J/cm}^2$ .

8. **(Original)** Method according to claim 6, characterized by the radiation energy density of each radiation pulse being chosen so small that overheating of the toner is avoided.

9. **(Original)** Method according to claim 8, characterized by the radiation energy density of an individual radiation pulse lying between 0.5 and  $5 \text{ J/cm}^2$ .

10. **(Original)** Method according to claim 6, characterized by the time spacing between two consecutive radiation pulses being about 10 to 1000 ms, preferably 200 to 600 ms.

11. **(Original)** Method according to claim 1, characterized by the employed electromagnetic radiation having a significant UV fraction.

12. **(Original)** Method according to claim 11, characterized by the UV fraction being greater than 10%.

13. **(Original)** Method according to claim 12, characterized by a xenon/mercury lamp being used for the radiation.

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14. **(Original)** Method according to claim 12, characterized by the radiation being filtered in favor of a higher UV fraction.

15. **(Original)** Method according to claim 1, characterized by color toner, preferably toners of different color, being used and fixed in a toner image, one above the other and next to each other.

16. **(Original)** Method according to claim 15, characterized by at least one toner containing at least one additional absorber for absorption of electromagnetic radiation, preferably a non-visible part of this radiation.

17. **(Original)** Method according to claims 16, characterized by the toners of different color being adjusted to each other by the different absorption properties of the absorber or absorbers.